INTERIM SERVICE MANUAL

TLC170/TLC160

ALBA BUSH harvard HiNARi

SPECIFICATIONS

TEST STANDARD

1. Output Impedance R/L ch	: 4 OHM
2. Reference Output	: 50 mW
3. Supply Voltage	: AC120V 60Hz / 230V 50Hz
4. Headphone Impedance	: 32 OHM
5. Test Frequency List	:

	USA/CANADA	EUROPE	JAPAN
MW1 :	515	515 KHz	515 KHz
MW2 :	600	600 KHz	600 KHz
MW3 :	1000	1000 KHz	1000 KHz
MW4 :	1400	1400 KHz	1400 KHz
MW5 :	1730	1630 KHz	1630 KHz
LW1 :	—	145 KHz	
LW2 :	—	160 KHz	
LW3 :	—	200 KHz	
LW4 :	—	260 KHz	
LW5 :	—	275 KHz	
FM1 :	87.35	87.35MHz	75.5 MHz
FM2 :	90	90 MHz	80 MHz
FM3 :	98	98 MHz	98 MHz
FM4 :	106	106 MHz	106 MHz
FM5 :	108.25	108.25MHz	108.5MHz

SPECIFICATIONS

MW BAND

Modulation : AM 30% Mod. 400Hz

		UNIT	NOMINAL	LIMIT
1. Band Coverage		KHz	Mw1-Mw5	
2. Max. Sens.	MW2 KHz	dB/M	50	56
at 6 dB S/N	MW3 KHz	dB/M	50	56
	MW4 KHz	dB/M	50	56
3. S/N at 74dB/M	MW3 KHz	dB	30	24

LW BAND

Modulation : AM 30% Mod. 400 Hz

1. Band Coverage		KHz	Lw1-Lw5	
2. Max. sens.	LW2 KHz	dB/M	60	66
at 6 dB S/N	LW3 KHz	dB/M	60	66
Lw4 KHz		dB/M	60	66
3. S/N at 74dB/M	LW3 KHz	dB	20	16

FM BAND

Modulation : FM 22.5 KHz Dev. 1 KHz

1. Band Coverage		MHz	FM1-FM5	
2. Max. Sens.	FM2 MHz	dB	14	20
at 6 dB S/N	FM3 MHz	dB	14	20
	FM4 MHz	dB	14	20
3. Quieting Sens.	FM2 MHz	dB	20	26
at 30 dB S/N	FM3 MHz	dB	20	26
	FM4 MHz	dB	20	26
4. Frequency Response Lower	FM3 MHz	Hz	70	100
-3 db w/Pre-em(50us/75us)		KHz	10	8

FM Stereo Band

Modulation : FM 75KHz Dev. 1 KHz L 45% R45% Pilot 10%

1. Stereo Separation	FM3 MHz	dB	30	22

SPECIFICATION

TAPE CASSETTE

1. Play Back:

			UNIT	NOMINAL	LIMIT
a. Tape Speed	3KHz	STT-111N	%	+0.5	+3/-2
b. Wow & Flutter WTD. RMS JIS		STT-111N	%	0.25	0.35
c. Frequency Response Normal (1KHz 0 dB Ref.)		125Hz	dB	+-0	+-6
		8KHz	dB	+-0	+-6

2. Recording:

a. Recording Bias System				AC :80-72KHz	
b. Erasing System				AC	
Erasing Ratio W/JIS A Filterc.			dB	40	34
c. Normal Dubbing Speed	3KHz	STT-111N	%	0.5	+3/-2

CD

	CONDITION	UNIT	NOMINAL	LIMIT
1. Freq.Resp	100Hz VS 1KHz	dB	-3	-6
	10KHz VS 1KHz	dB	-3	-6
2. THD. 1KHz -10dB		%	1.0	2

AUDIO

POWER FOR 1.5W / 8 OHM SPEAKER LOADING (101-480288-XX) V TYPE (101-481828-XX) H TYPE

IC: UPC1316C

1. Power Consumption		W	18	20
2. 10% THD Power Output	(MTT-112B 1KHz, 0dB)	W	1.5	1.2
3. Max. Power Output	(FM 75KHz DEV)	W	2.0	1.7

POWER FOR 2W / 4 OHM SPEAKER LOADING (101-480288-XX) V TYPE (101-481828-XX) H TYPE

IC: KA2206B

1. Power Consumption		W	22	20
2. 10% THD Power Output	(MTT112B 1KHz, 0dB)	W	2.0	1.7
3. Max. Power Output	(FM 75KHz DEV)	W	2.5	2.0

POWER FOR 2.5W / 4 OHM SPEAKER LOADING (101-570289-XX)

IC: KA2206B

1. Power Consumption		W	20	30
2. 10% THD Power Output	(MTT-112B 1KHz, 0dB)	W	2.5	2.2
3. Max. Power Output	(FM 75KHz DEV)	W	3.0	2.5

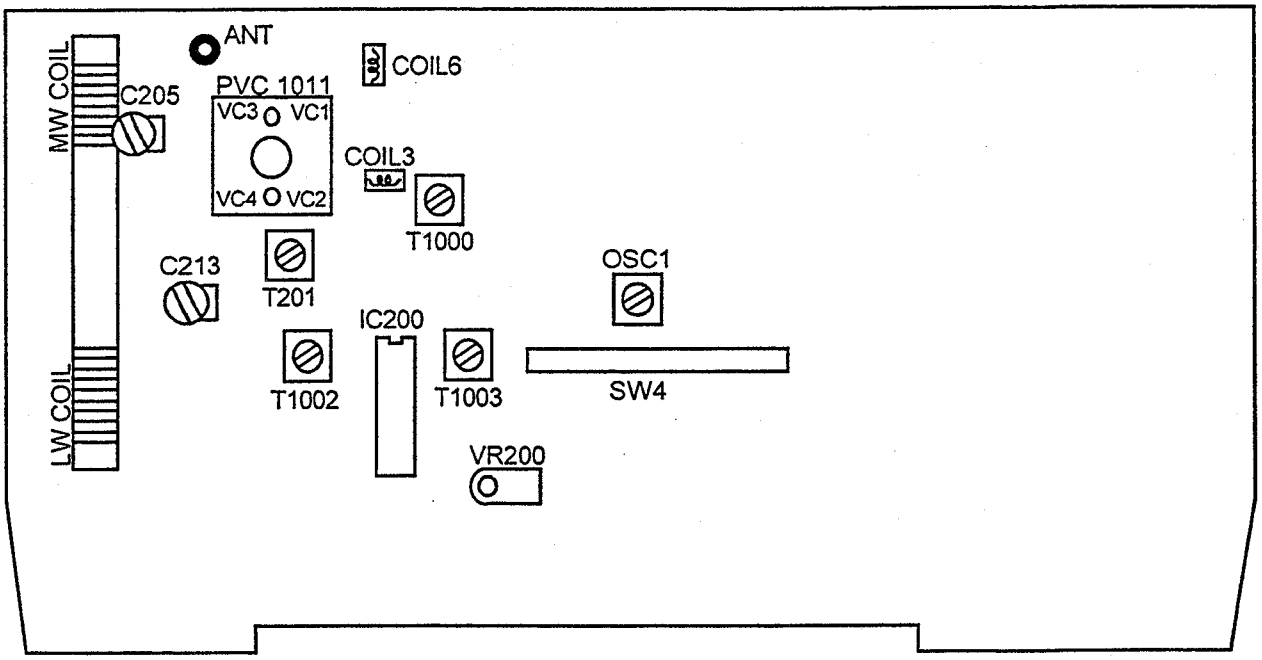
POWER FOR 5W / 4 OHM SPEAKER LOADING (101-661888-XX 4 HOLES)

IC: BA5412 / BA5415

1. Power Consumption		W	30	40
2. 10% THD Power Output	(MTT-112B 1KHz DEV)	W	5.0	4.5
3. Max. Power Output	(FM 75KHz DEV)	W	6.5	5.5

ADJUSTMENTS

TEST AND ADJUSTMENT POINTS



MAIN BOARD

ALIGNMENT

AM SECTION

SWEEP GENERATOR

IF	Adjust for	Adjustment
455KHz or 465KHz	Maximum	T608

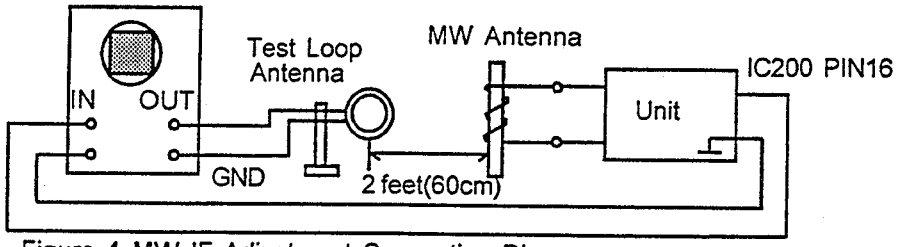
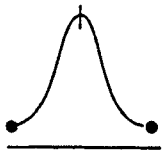


Figure 4 MW IF Adjustment Connection Diagram



455KHz

Figure 5 AM IF Curve

STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUST	REMARK
1.	455KHz	(1)AM IF SWEEP GEN. WITH LOOP ANTENNA. (2)ALIGNMENT OSCILLOSCOPE. (3)POWER SUPPLY.	LET THE MW ANT COIL CLOSE TO MW GEN. ANTENNA	TAKE OUT THE SIGNAL FROM IC200 PIN16	ADJUST T1002 TO GET MAX OUTPUT AT 455KHz	(1)BAND SW. IN MW POSITION (2)VOL.CONTROL AT MIN.POSITION (3)TUNE TO HIGH END.

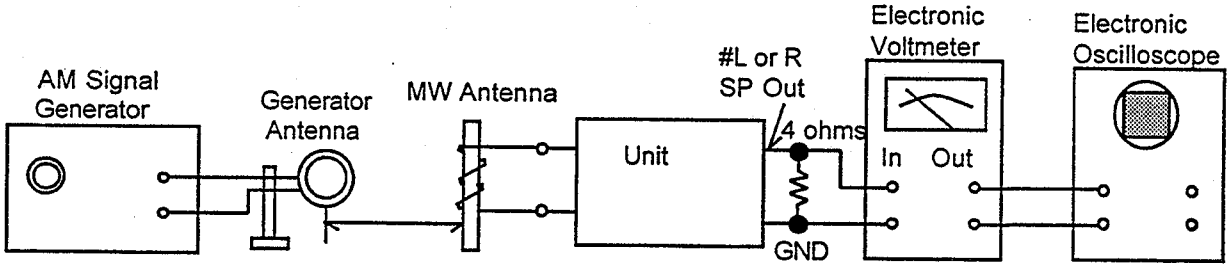


Figure 6 MW RF Adjustment Connection Diagram

2.	515KHz	(1)AM SWEEP GEN. WITH ANT. (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST T201 TO GET OUTPUT AT 525KHz.	TUNE TO LOW END.
3.	1730KHz OR 1630	SAME AS STEP 2.	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST PVC1011 -C4 TO GET OUTPUT AT 1750 KHz.	TUNE TO HIGH END.
4.	REPEAT STEP 2,3 TO GET THE BEST PERFORMANCE.					
5.	1400KHz	SAME AS STEP 2. 1.	SAME AS STEP 1.	SAME AS STEP	ADJUST PVC1011 C3 TO GET MAX. OUTPUT AT 1400 KHz.	TUNE TO 1400 KHz.
6.	600KHz	SAME AS STEP 2.	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST MW-ANT COIL TO GET MAX. OUTPUT AT 600 KHz.	TUNE TO 600 KHz.
7.	REPEAT STEP 5,6 UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.					

ALIGNMENT

FM SECTION

SWEEP GENERATOR

IF Genescope

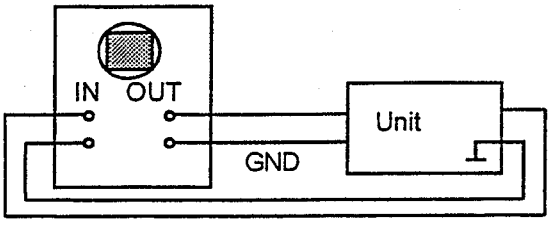


Figure 7 FM IF Adjustment Connection Diagram

IF	Adjust for	Adjustment
10.7MHz	The maxium wave 10.7MHz marker in centre	T1000 and T1003

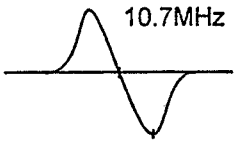


Figure 8 FM "S" Curve

STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUSTMENT	REMARK
1	10.7MH.z	(1)FM IF SWEEP GENERATOR. (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY.	INJECT THE IF SWEEP SIGNAL THROUGH 500Pf CAPACITOR TO POINT 2.	SIGNAL ARE TAKEN OUT IC200 PIN16	ADJUST T606 AND T602 REPEAT TO GET BEST "S" CURVE AT 10.7 MHz.	(1)BAND SW. IN FM POSITION. (2)VOL. CONTROL IN MIN.POSITION (3)TUNE TO HIGH END.

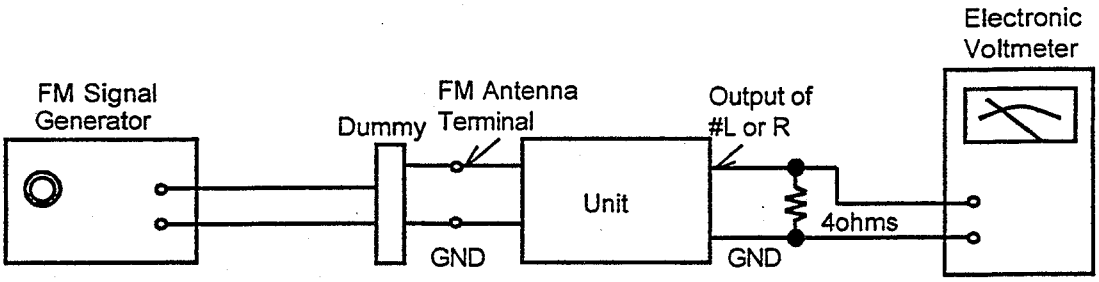
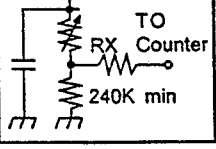


Figure 9 FM RF Coverage &Tracking Adjustment Connection Diagram

2.	108.25MHz	(1)FM RF SWEEP GENERATOR (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY	INJECT THE RF SIGNAL DIRECTLY TO FM ANT TERMINAL	SAME AS STEP 1.	ADJUST PVC-1011-C2 TO GET OUTPUT AT 109MHz.	(1)SAME AS STEP 1.
3.	87.35MHz	SAME AS STEP 2.	SAME AS STEP 2.	SAME AS STEP 1.	ADJUST COIL 3 TO GET OUTP-UT AT 87MHz.	TUNE TO LOW END.
4.	REPEAT STEP 2,3 TO UMTIL NO FURTHER IMPROVEMENT CAN BE MADE.					
5.	106MHz	SAME AS STEP 2.	SAME AS STEP 2.	SAME AS STEP 1.	ADJUST PVC-1011-C1.TO GET MAX.OUTPUT.	TUNE TO 106MHz.
6.	90MHz	SAME AS STEP 2.	SAME AS STEP 2.	SAME AS STEP 1.	ADJUST 101L 6 TO GET MAX. OUTPUT.	TUNE TO 90MHz.
7	REPEAT STEP 5,6 UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.					
8	98MHz	(1)OSCILLOSCOPE (2)COUNTER.		SIGNAL ARE TA-KEN OUT FROM IC200 PIN 13 	ADJUST VR101 TO GET 76KHz +/-0.05 AT TP4 IC200 PIN 13	(1)BAND SW. IN FM STEREO POSITION (2)TUNE TO 98MHz

ALIGNMENT

LW SECTION

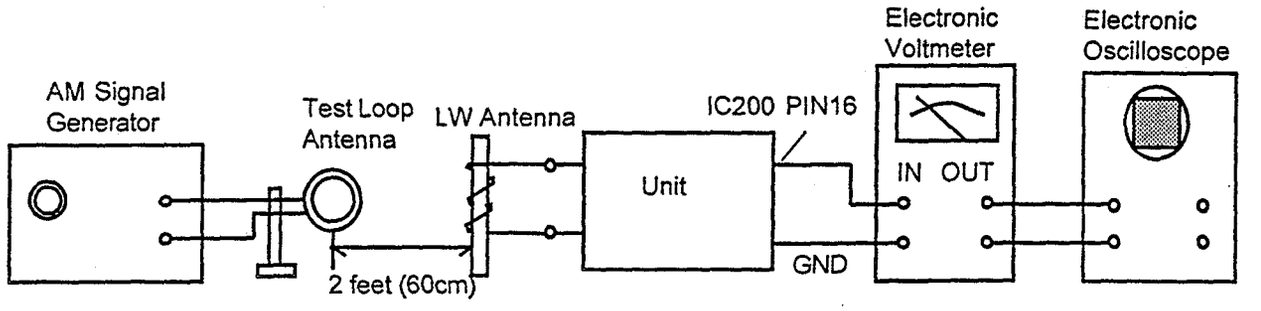


Figure 10 LW RF Adjustment Connection Diagram

STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUST	REMARK
1	270KHz	(1)LW SWEEP GEN WITH ANT. (2)ALIGNMENT OSCILLOSCOPE (3)POWER SUPPLY	LET THE LW ANT COIL. CLOSE TO LW GEN.ANTENNA	TAKE OUT THE SIGNAL FROM IC200 PIN 16	ADJUST C213 TO GET OUT-PUT AT 270KHz	(1)BAND SW. IN LW POSITION (2)VOL.CONTR-OL.AT MIN. POSITION (3)TUNE TO HIGH END.
2	145KHz	SAME AS STEP 1.	SAME AS STEP 1.	SAME AS STEP 1.	CHECK OUTPUT AT 145KHz.	TUNE TO LOW END.
3	REPEAT STEP 1,2 UNTIL NO FURTHER IMPROVEMENT CAN BE MADE.					
4	260KHz	SAME AS STEP 1.	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST C205 TO GET MAX. OUTPUT AT 260KHz.	TUNE TO 260 KHz.
5	160KHz	SAME AS STEP 1.	SAME AS STEP 1.	SAME AS STEP 1.	ADJUST LW ANT COIL TO GET. MAX OUTPUT. AT 160KHz.	TUNE TO 160 KHz.
6	PEPAT STEP 4,5 UNIT NO FURTHER IMPROVEMENT CAN BE MADE.					

ALIGNMENT

TAPE DECK SECTION

STEP	ALIGNMENT FREQ	TEST EQUIPMENT	SIGNAL-IN	SIGNAL-OUT	ADJUST	REMARK
1.		(1)COUNTER (2)OSCILLOSCOPE	TEST TAPE STT-111N (OR MTT-111N) 3KHz	SPEAKER OUTPUT	ADJUST MOTOR TO HAVE 3KHz AT SPEAKER OUTPUT.	(1)FUNCTION SW. IN TAPE POSITION (2)VOL.ADJUSTED TO REF.OUTPUT.

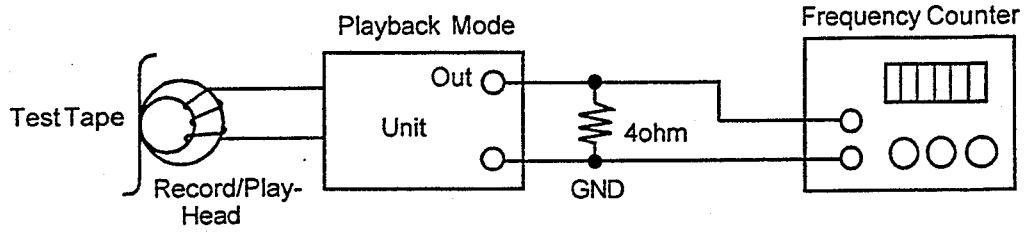


Figure 11 Motor Speed Adjustment Connection Diagram

2.		SAME AS STEP 1.	TEST TAPE 8KHz .	SAME AS STEP 1.	ADJUST TAPE HEAD SCREW TO GET MAX. OUTPUT.	SAME AS STEP 1.

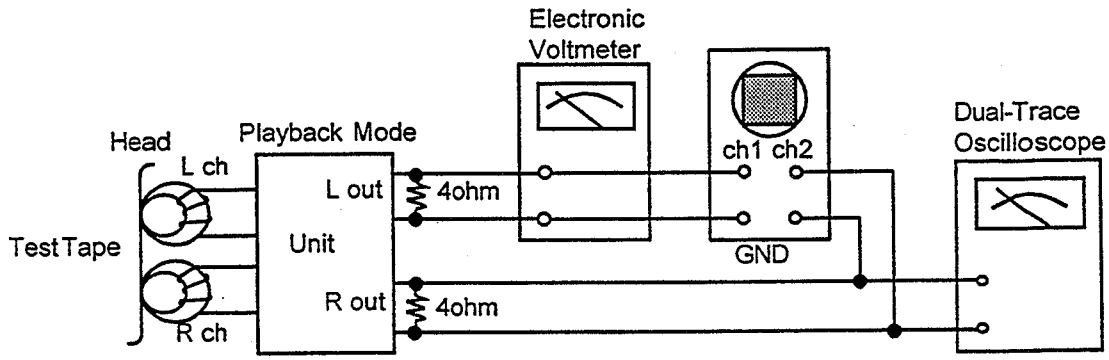


Figure 12 Azimuth Adjustment Connection Diagram

3. REPEAT STEP 1,2 FOR TAPE DECK A & B (1 & 2) TO GET THE BEST PERFORMANCE.						
4.		(1)COUNTER (2)VTVM WITH X10 PROBE		J1500 TO VTVM I/P.	ADJUST OSC1 TO 80KHz FOR BEATCUT(1) CHECK 72KHz. FOR BEAT CUT(2)	COUNTER CONNECT TO VTVM O/P

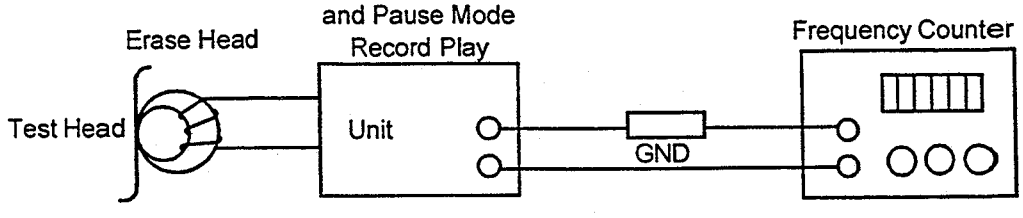
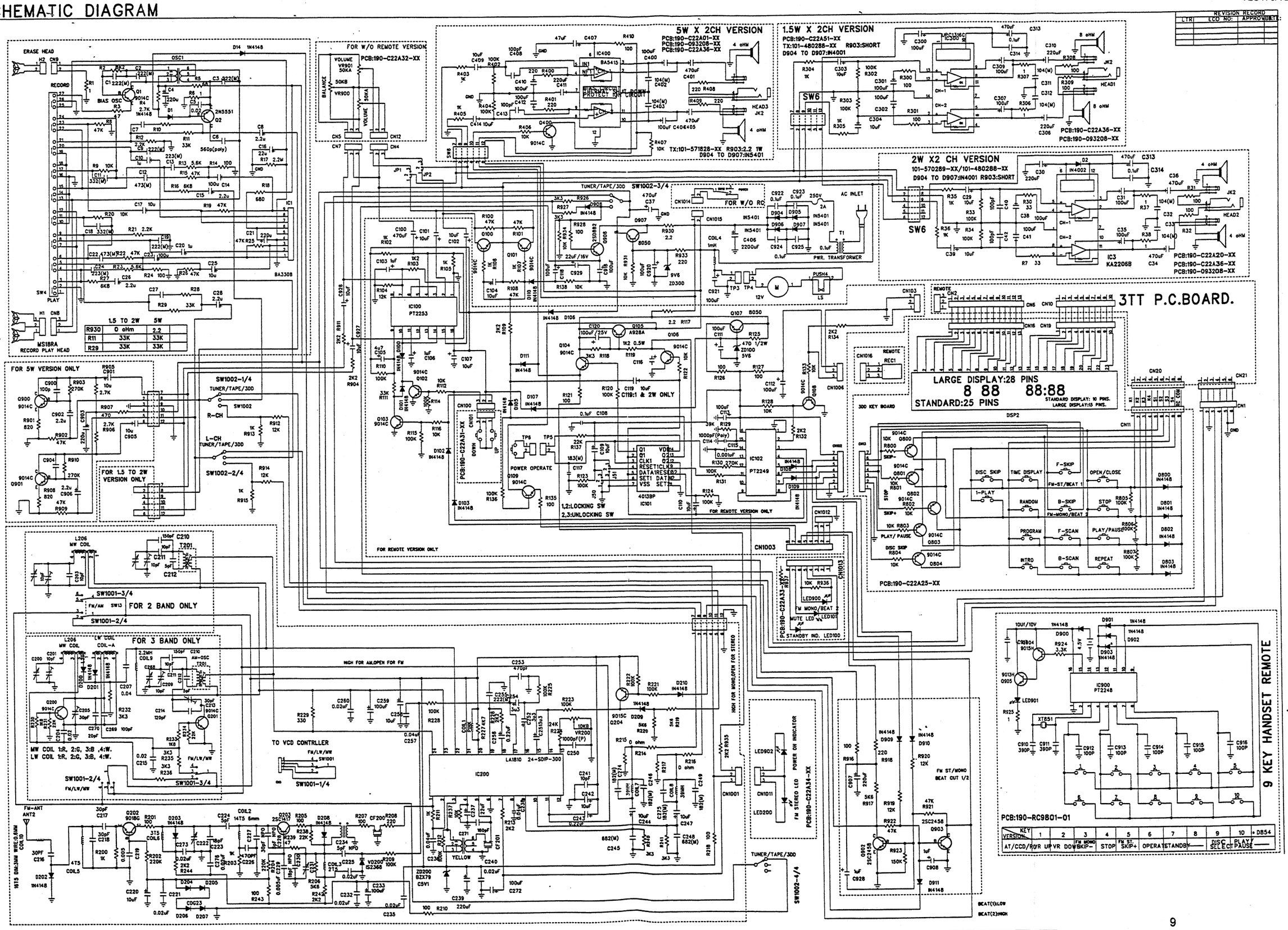
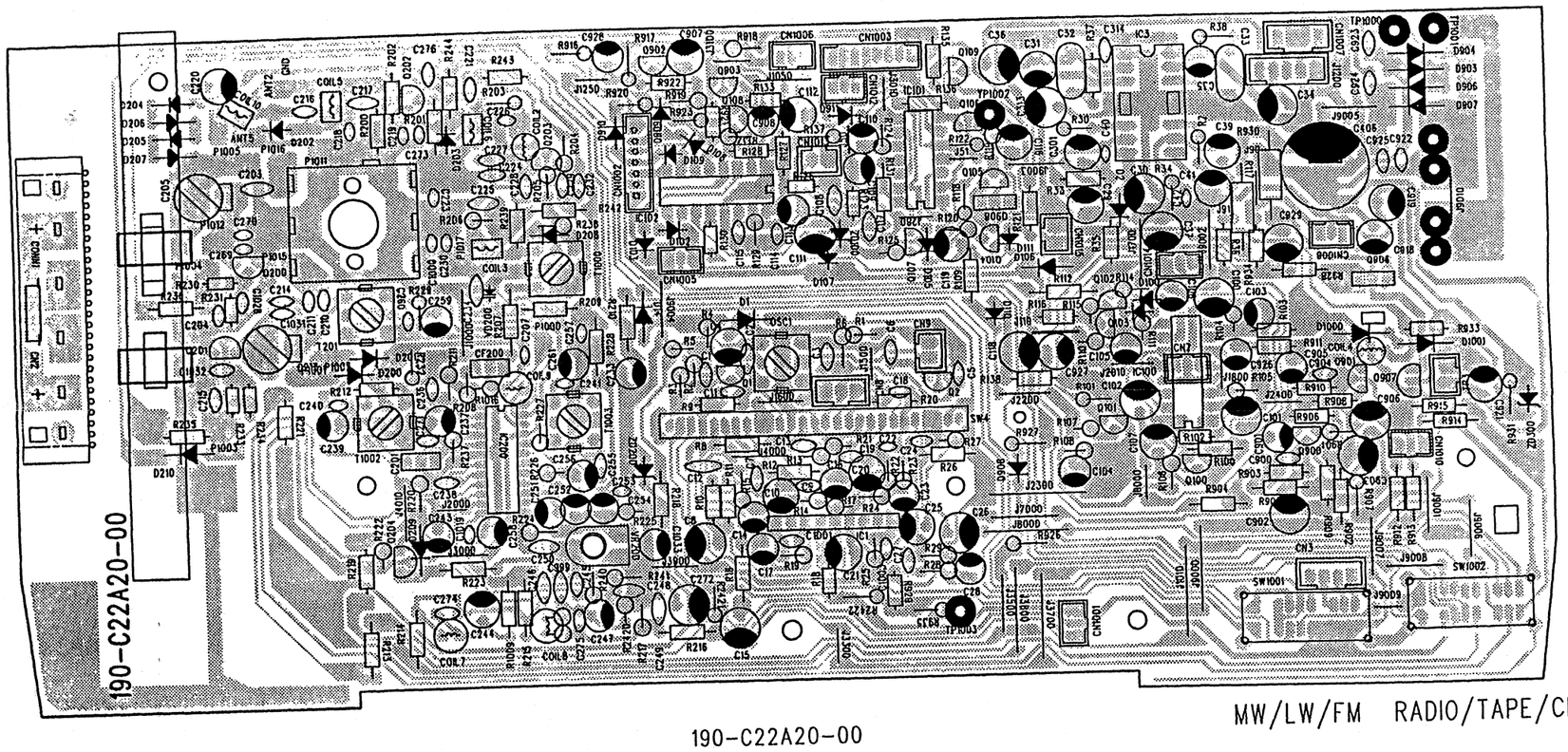


Figure 13 Frequency Adjustment Connection Diagram

SCHEMATIC DIAGRAM



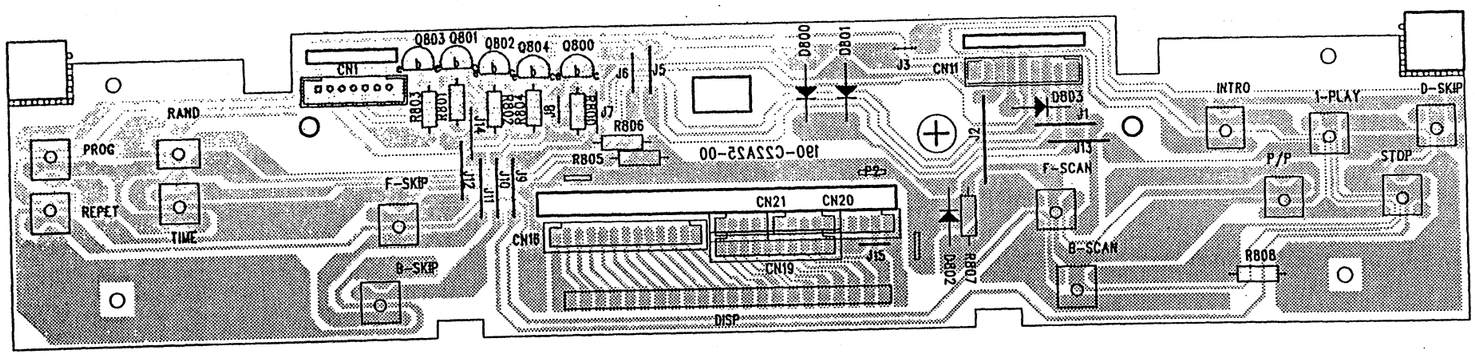
COMPONENT LAYOUT



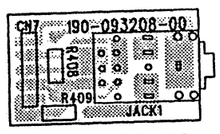
MW/LW/FM RADIO/TAPE/CD

190-C22A20-00
MAIN BOARD (FOR 2W)

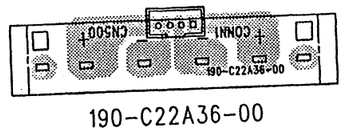
COMPONENT LAYOUT



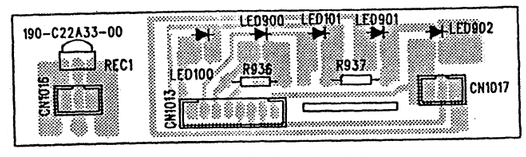
190-C22A25-00
CD CONTROL BOARD



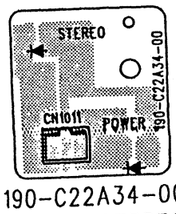
190-093208-00
HEADPHONE JACK BOARD



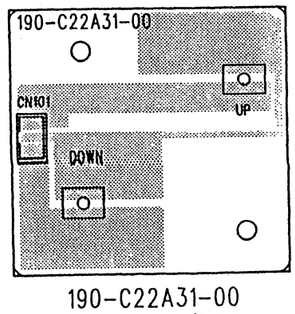
190-C22A36-00
SPEAKER CONNECTION CLIP PCB



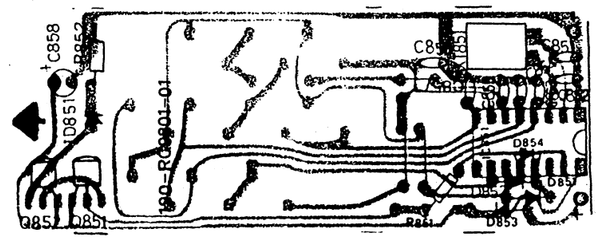
190-C22A33-00
REMOTE CONTROL AND LED PCB



190-C22A34-00
POWER ANDFM STEREOIND PCB

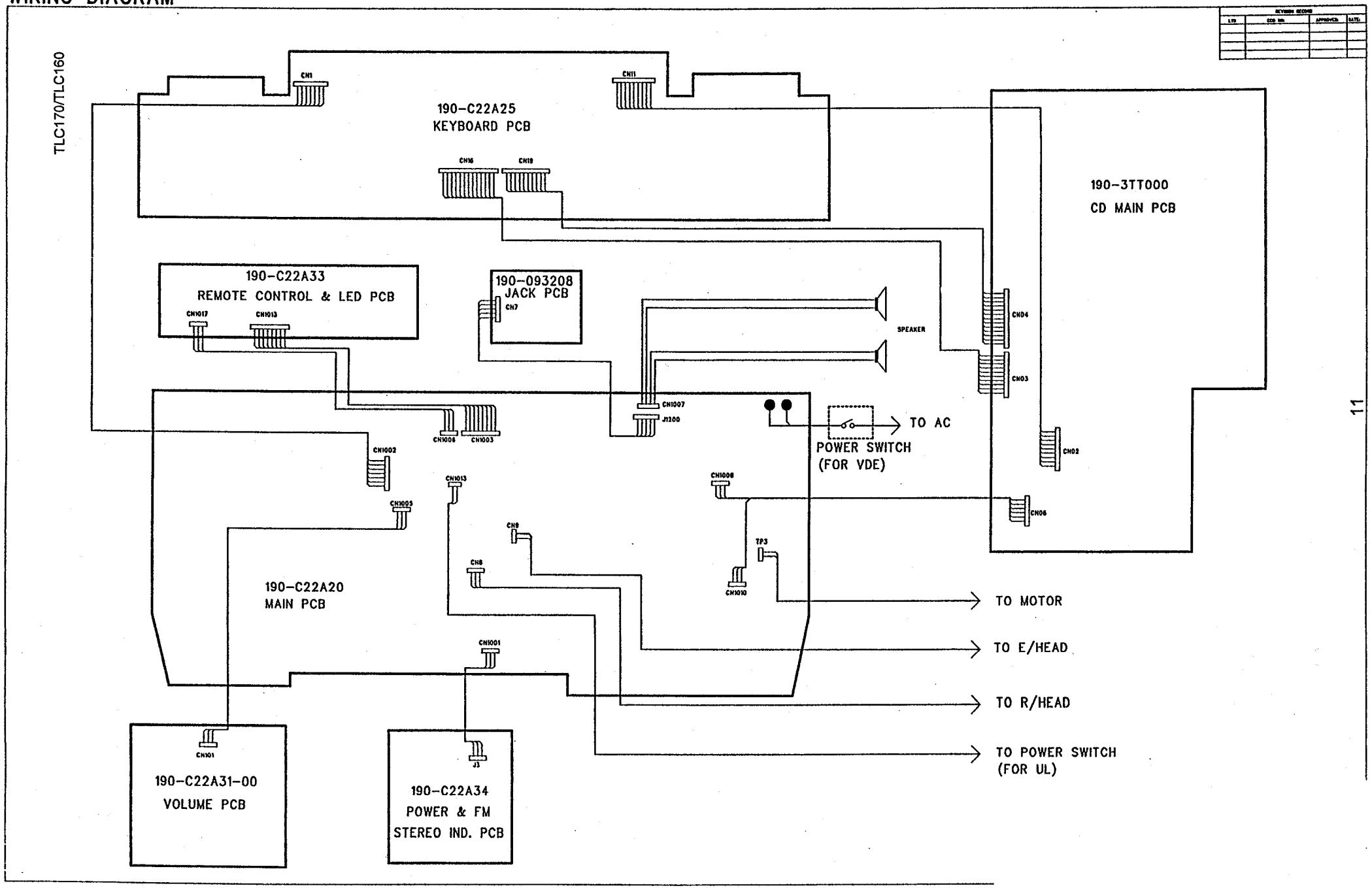


190-C22A31-00
VOLUME UP/DOWN



190-RC9801-01
REMOTE TRANSMITTER PCB

WIRING DIAGRAM



PART LIST

LOCATION	DESCRIPTION	P /N #
IC100	I.C. PT2253 ELECT VOL CTR. PTC (REPLACE TC9153)	133-002253-71
IC100	I.C. KA2250 DUAL ELECTRONIC VOLUME CONTROL (SAMSUNG)	133-002250-61
IC100	I.C. TC9153AP	133-009153-14
IC101	I.C. TC4013 CMOS TOSHIBA	133-004013-14
IC102	I.C. PT2249 REMOTE DECODER (RX) PTC	133-802249-71
IC102	I.C. KS9801 INFRARED RAY REMOTE RECEIVER (SAMSUNG)	133-809801-61
IC300	I.C. UPC1316C 1.2W POWER AMP. NEC	133-201316-13
IC200	I.C. LA1810 AM/FM-IF, MPX TUNERSYSTEM VCC=4.5V DIP24S (SANYO)	133-201810-16
IC1	I.C. BA3308 (ROHM) AF PRE - AMP + ALC	133-203308-18
IC851	I.C. PT2248 REMOTE ENCODER PTC	133-802248-71
IC851	I.C. TC9148P TOSHIBA	133-809148-14
IC851	I.C. KS9802 INFRARED RAY REMOTE CONTROL TRANSMITTER (SAMSUMG)	133-809802-61
IC3	I.C. KA2206B POWER AMP. FOR 2W (SAMSUNG)	133-202206-61
IC400	I.C. BA5415 POWER AMP. FOR 5W (ROHM)	133-205415-18

---------- CONTENTS ----------

DESCRIPTION

SPECIFICATION .....

CD ADJUSTMENT .....

TROUBLE SHOOTING GUIDE(FOR CD PLAYER) .....

IF LASER IS EMITTING LIGHT .....

IF LASER IS NOT EMITTING LIGHT .....

IF DISC IS NOT MOVING .....

AUDIO CIRCUIT CHECK .....

CD FUNCTION LIST .....

CONNECTION OF CD MECHSNISM .....

CD SCHEMATIC DIAGRAM .....

CD COMPONENT LAYOUT .....

CD BLOCK DIAGRAM .....

SPECIFICATIONS

*TEST CONDITION
1. Equipment : Panasonic Audio Analyzer (VP-7723A)
2. Test disc : A-BEX Test CD (TCD-782)
3. Loading : Without loading
4. Operating Voltage : DC 8V ± 10% / 650mA

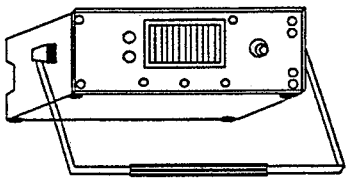
The following specification are assured only when the secondary
Voltages of the power supply are within specification

ITEM	TEST DISC	MIN	STANDARD	MAX	REMARKS
Output Level	TCD-782		1.7Vrms		Specification at 1 KHz, 0dB
Harmonic Distortion	TCD-782		0.07%		Specified at 1 KHz measurement of signal that has gone through LPF(20KHz) & (JIS-A)
S/N Ratio	TCD-782		90dB		Specified at 1 KHz measured after audio corrector filtering (JIS-A) & LPF(20KHz)
Frequency Response 20 Hz 100 Hz 10 KHz	TCD-782		 -3 dB 0 dB 0 dB		Set to 0 dB at 1 KHz
Interruption correction	TCD-725A	>0.6mm	>0.7mm		
Black Dot defect Correction	TCD-725A	>0.6mm	>0.6mm		
Finger Print Correction	TCD-725A		>65um		
Deflection (Vertical Deviation)	TCD-731R	0.6mm	0.8mm		
Scratch defect Correction	TCD-721	0.6mm	0.8mm		

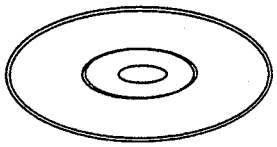
ALTERATIVE ADJUSTMENT

METER AND JIG FOR ADJUSTMENT

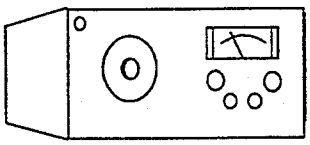
1-1. Oscilloscope 40MHz
Meguro MO-1252A



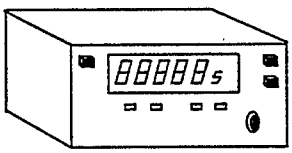
1-2. Test disc
(Sony type 4: YEDS- 18
"ABEX " TCD-782)



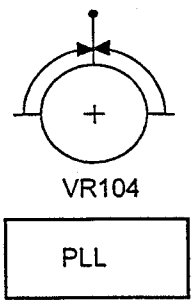
1-3. Low frequency oscillator
Kenwood AG 203

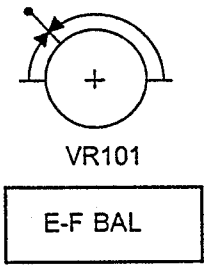


1-4. Digital frequency counter
Kenwood FC-756



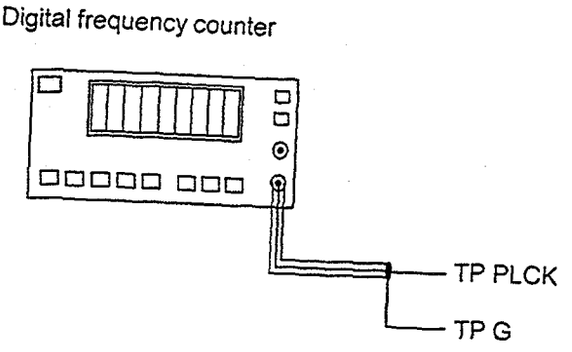
INITIAL SETTING OF ADJUSTMENT POTENTIOMETERS
Before adjusting, preset adjustment potentiometers like below.



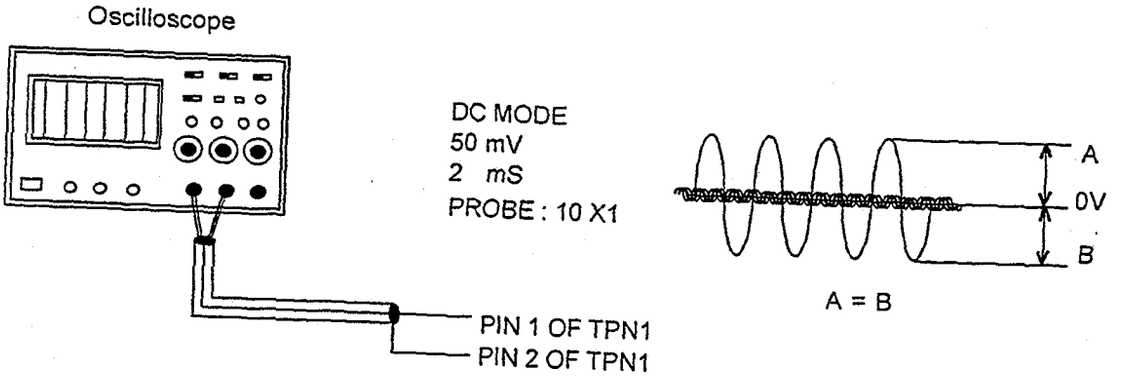


CD ADJUSTMENT

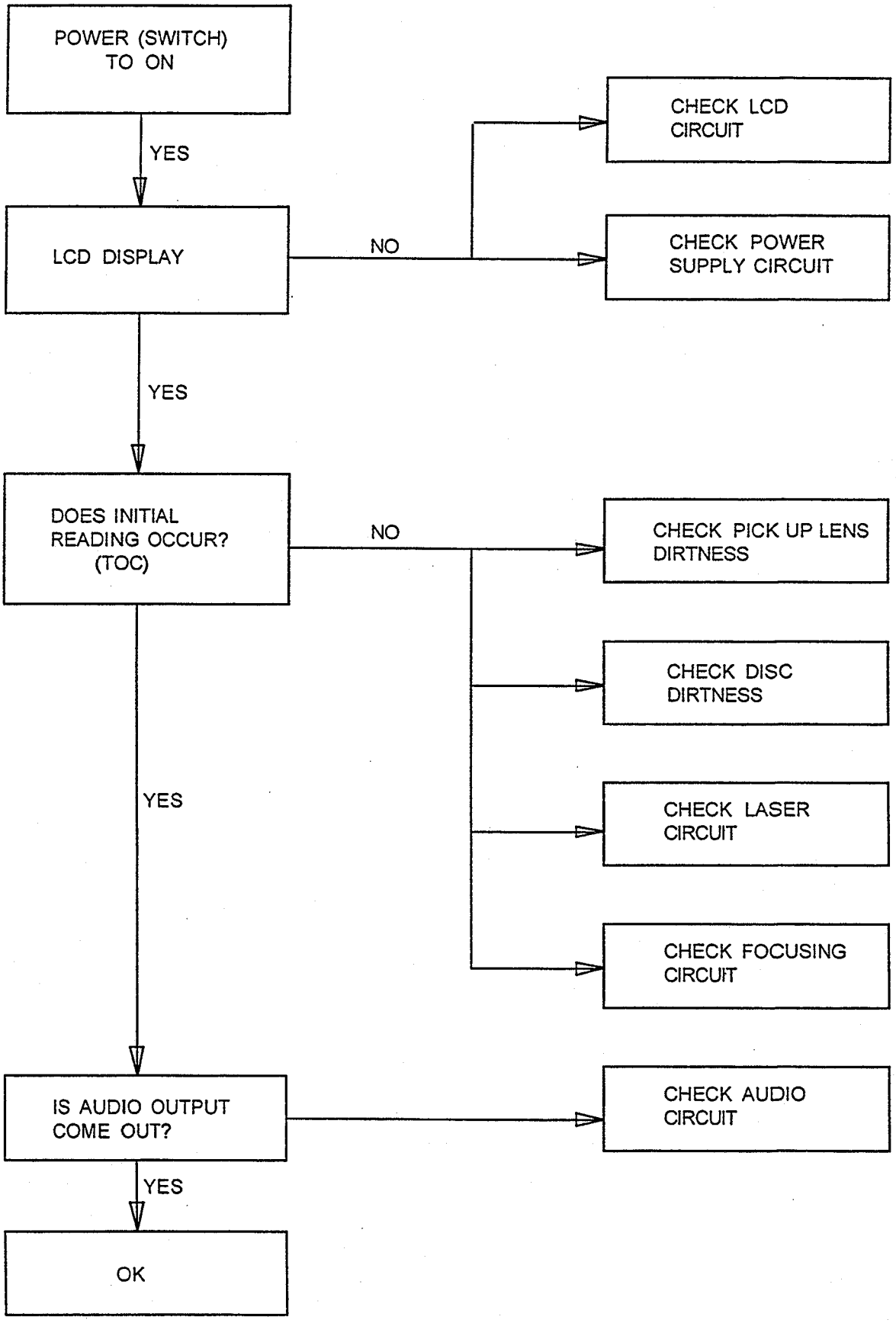
PLL (VCO) ADJUSTMENT
(1) Connect digital frequency counter to PLCK and TPN1 verf Capacitor.
(2) Adjust VR104 so that the frequency counter reading becomes 4.3000 MHz +/- 50KHz.



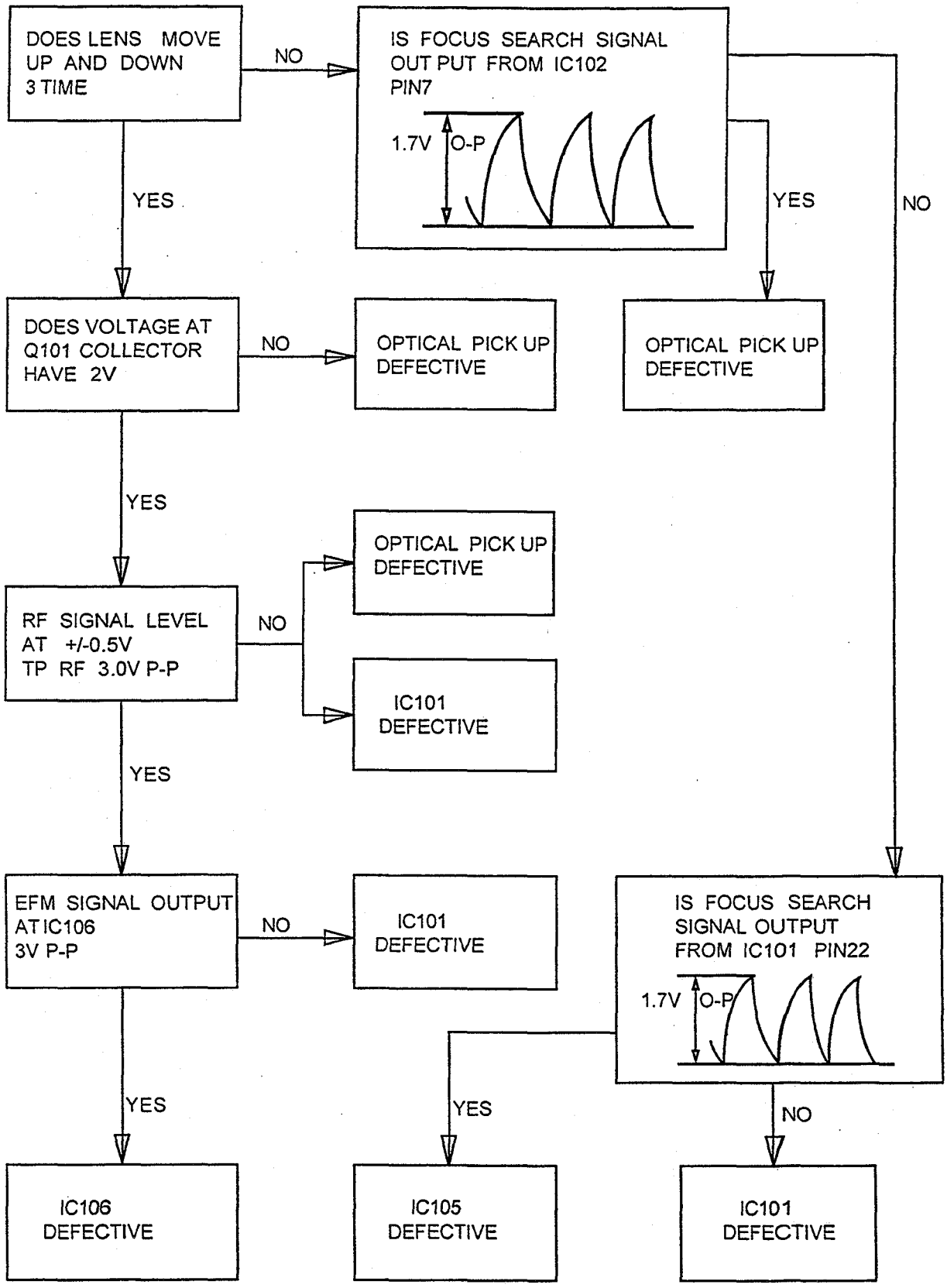
E-F BALANCE ADJUSTMENT
(1) Connect the oscilloscope to TPN1 PIN1 (TE) and PIN 2 (REF)
(2) Place test disc on turntable.
(3) Adjust VR101 so that the amplitude above and below the zero DC line becomes equal (amplitude A=B)



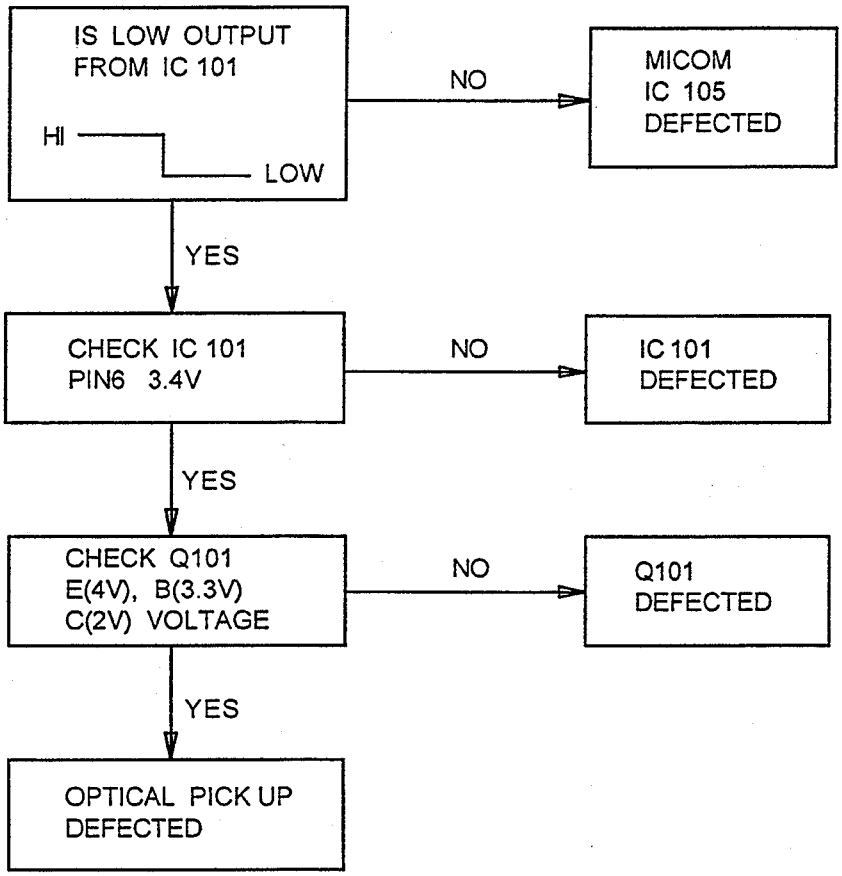
TROUBLE SHOOTING GUIDE (FOR CD PLAYER)



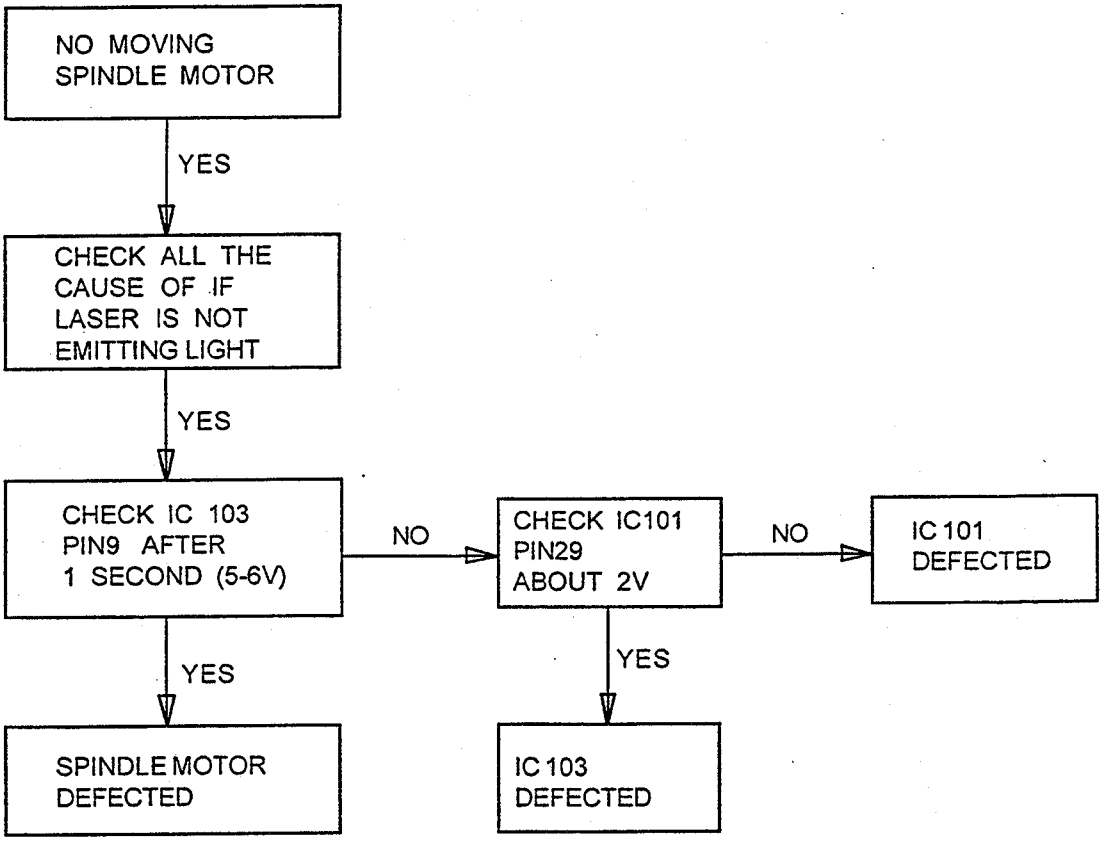
IF LASER IS EMITTING LIGHT

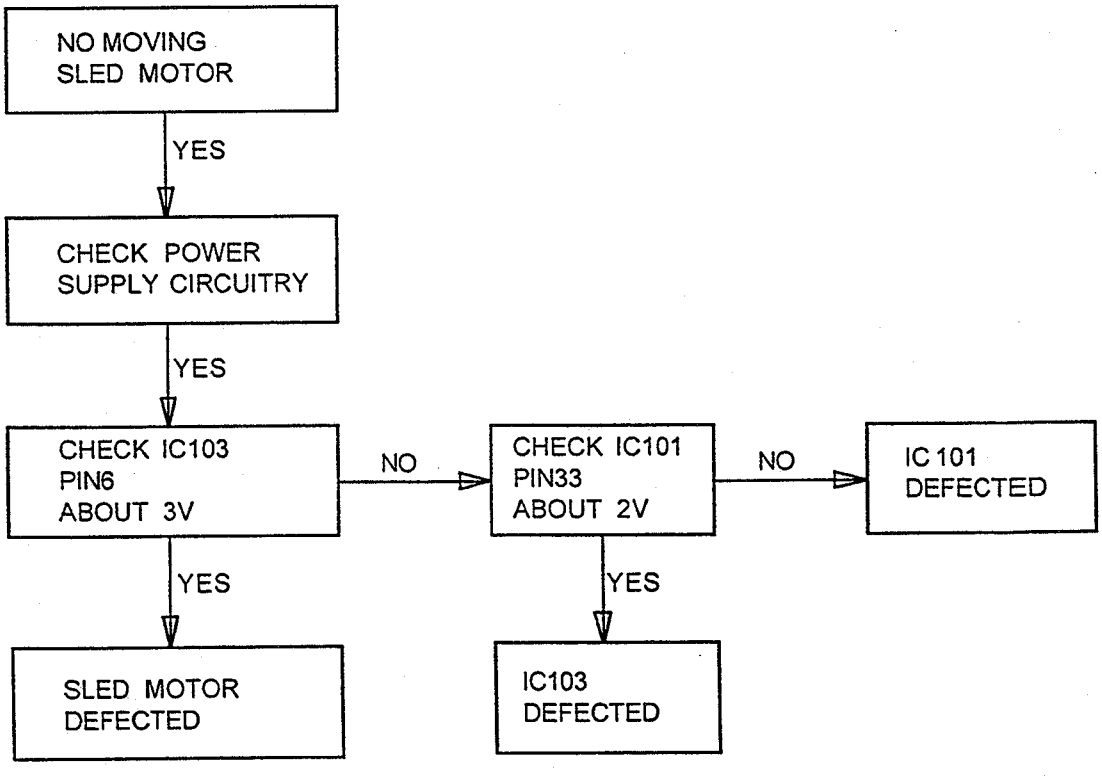


IF LASER IS NOT EMITTING LIGHT

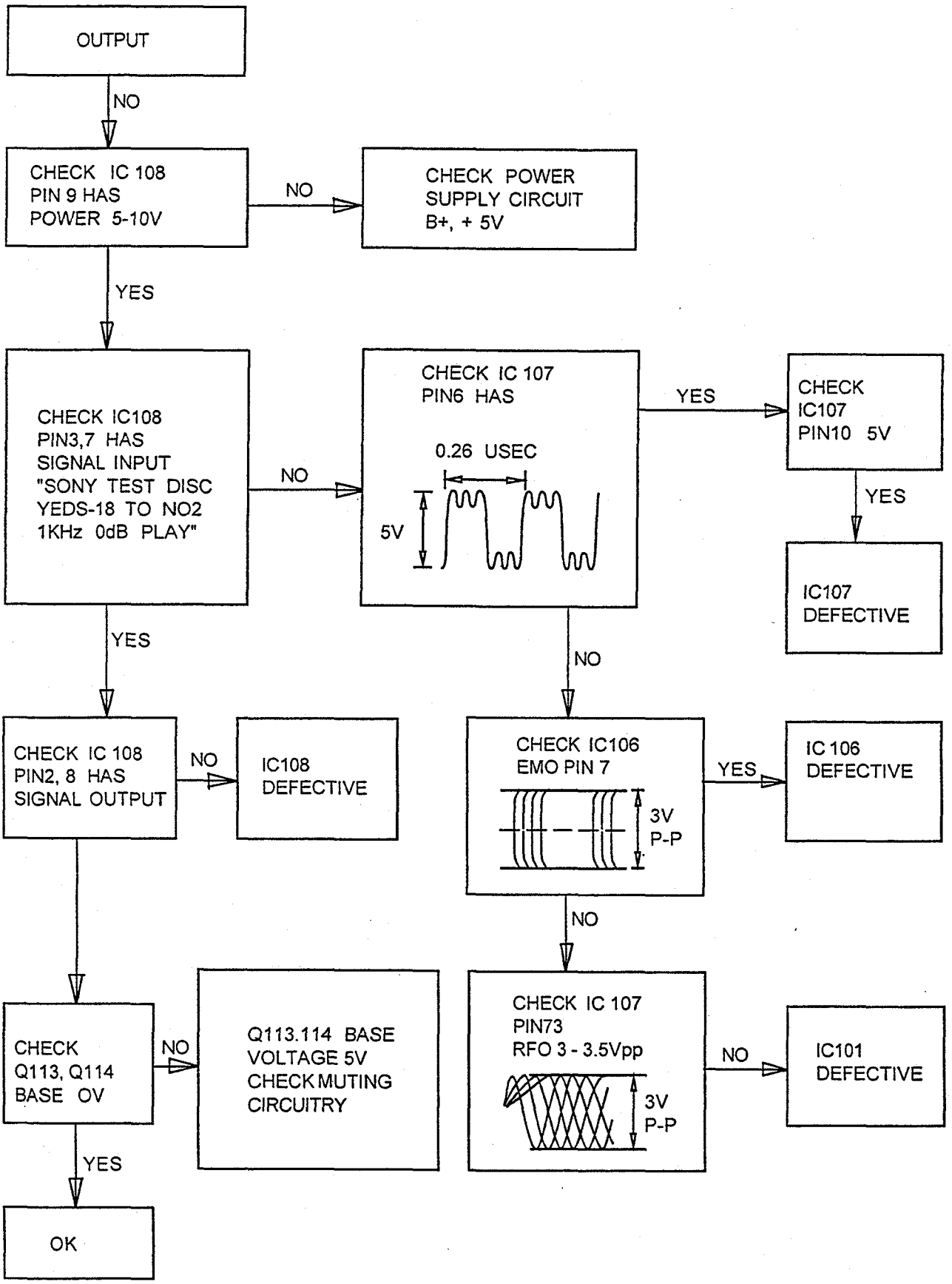


IF DISC IS NOT MOVING





AUDIO CIRCUIT CHECK



FUNCTION LIST

General Operation

Play/Pause Button	Press once to start play, press once again to stop the disc play temporarily.
Stop key	Press to stop play.
Skip +/-key	Press once to skip to next track or back to previous.
Search ▶▶I / I◀◀	Press contionuously to execute REW/FF, released to terminate REW/FF.
Disc	Press to select the disc.

Random Play

Random Button Press once Press the Play Button to play the disc in random order.

Program Play

Up to 32 tracks
Press the MEMORY/PROGRAM
Select a desired track by using the Skip Buttons.
Press the MEMORY/PROGRAM Button to enter the track into the program.
Press PLAY/PAUSE Button to play the disc
Press STOP Button to terminate program play.

Repeat Play

Single Track Repeat Play

Press REPRAT Button.
The display will show a flashing "REPEAT" ONE.

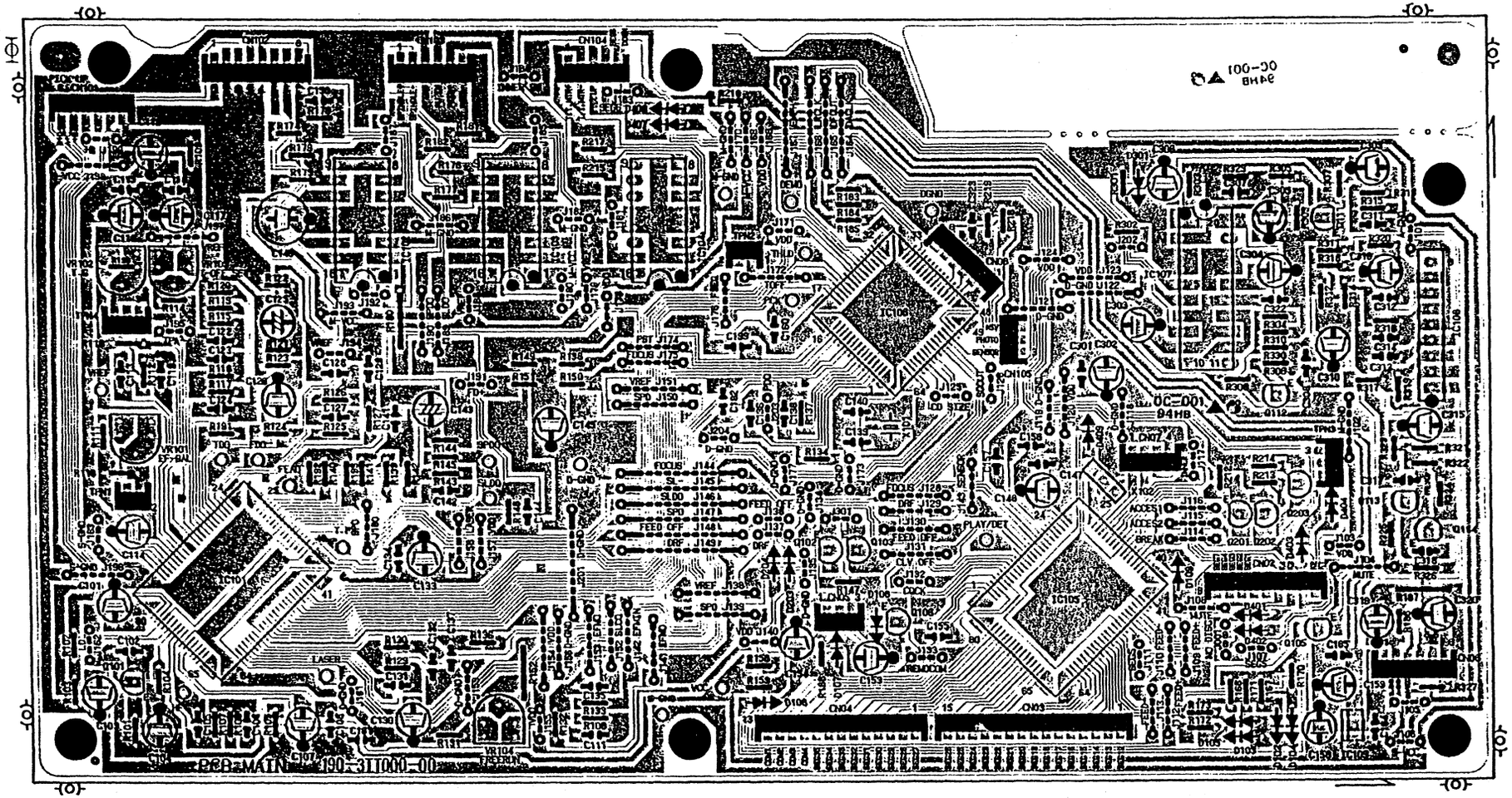
All Tracks Repeat Play

Press REPEAT Button.
The display will show "REPEAT" ONE DISC".

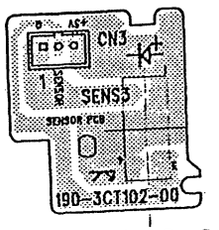
All Disc Repeat Play

Press "REPEAT" Button.
The display will show "REPEAT DISC ALL DISC".

COMPONENT LAYOUT



190-3TT000-00
MAIN BOARD

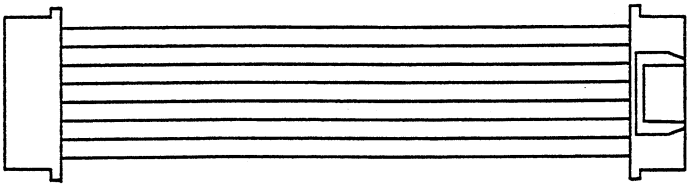


190-3CT102-00
SENSOR BOARD

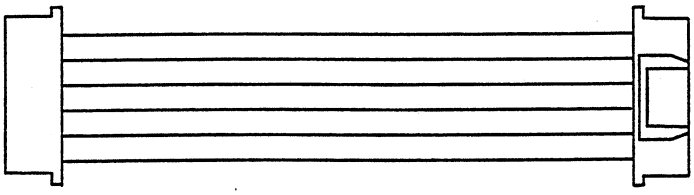
TLC: 70/TLC160

CONNECTION OF CD MECHSNISM

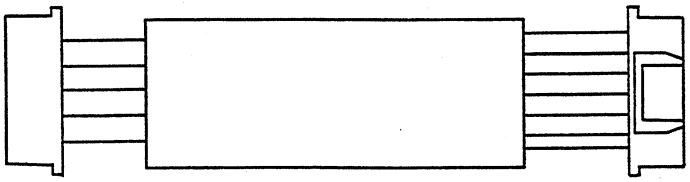
PCB



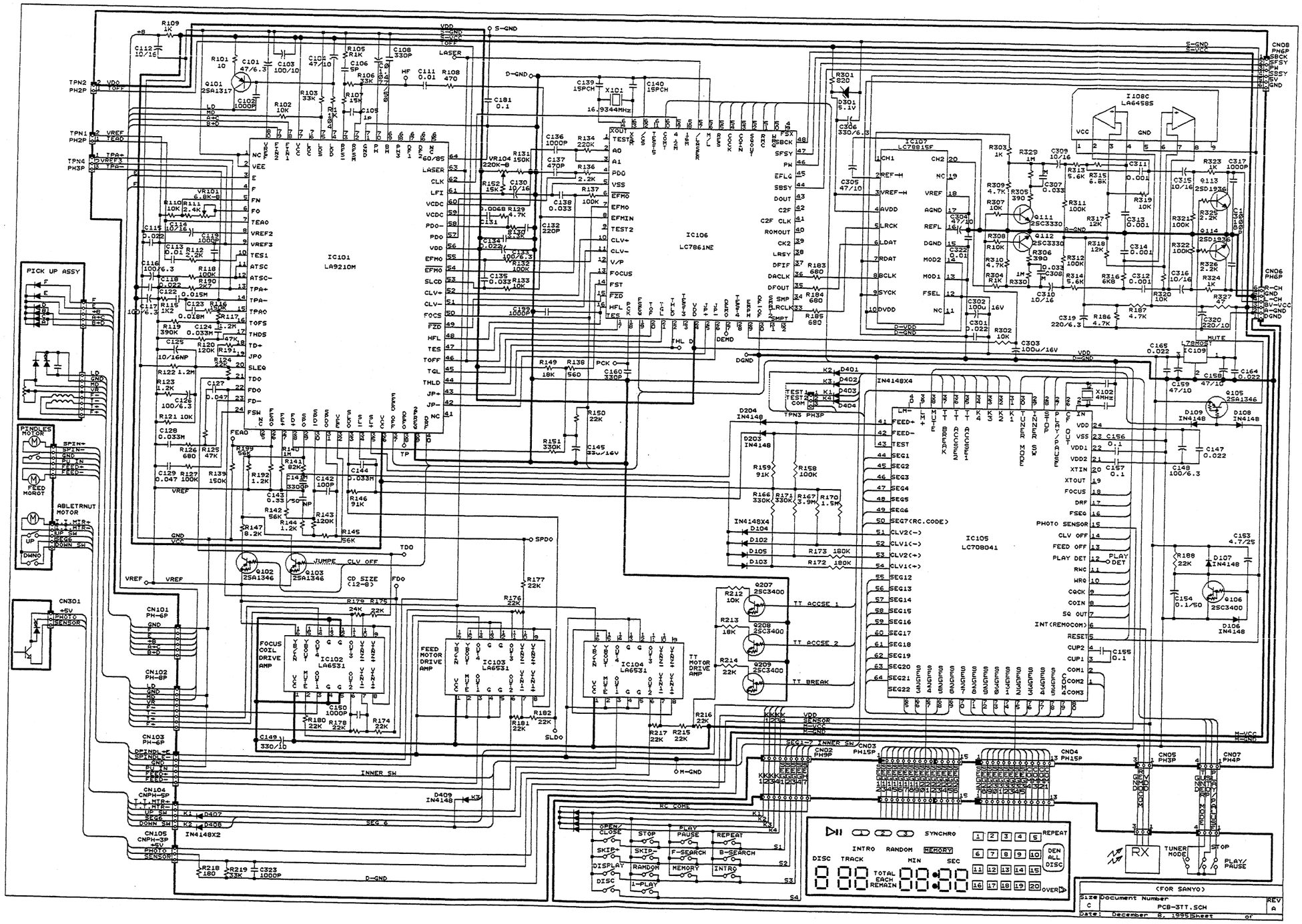
MOTOR
CN103

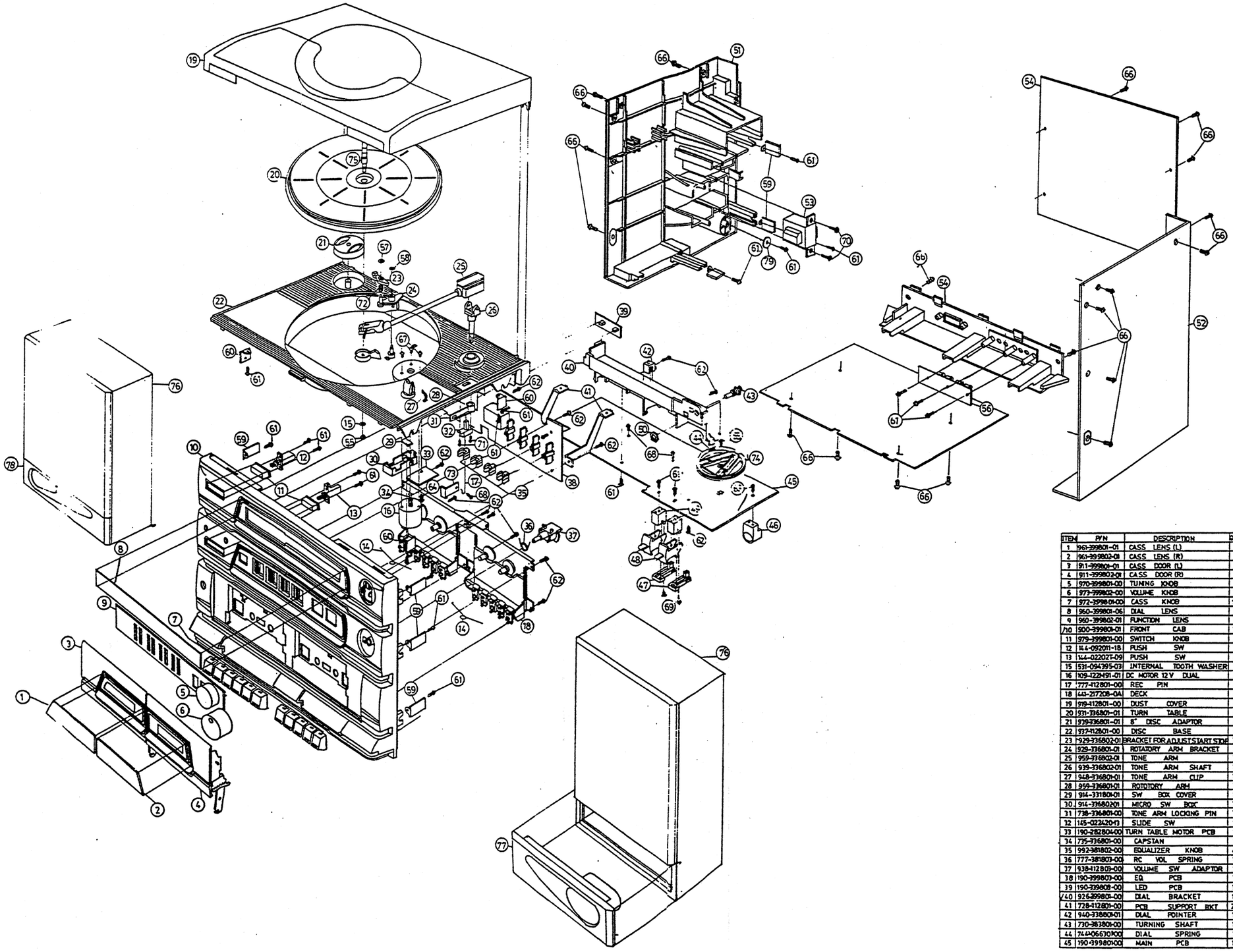


ACTUATOR
CN102



PHOTODIODE
CN101


IC101
LA9210M
IC106
LC7861NE
IC107
LC78815F
IC105
LC708041
IC102
LA6531
IC103
LA6531
IC104
LA6531
I108C
LA6458S
FOCUS COIL DRIVE AMP
FEED MOTOR DRIVE AMP
TT MOTOR DRIVE AMP
PICK UP ASSY
SPINDLE MOTOR
FEED MOTOR
ABLETRNUT MOTOR
CN101 PH-6P
CN102 PH-8P
CN103 PH-6P
CN104 CNPH-5P
CN105 CNPH-3P
CN301
CN02 PH9P
CN03 PH15P
CN04 PH15P
CN05 PH3P
CN07 PH4P
CN08 PH6P
CN09 PH6P
IN4148X4
IN4148X2
PHOTO SENSOR
RC CODE
INNER SW
SEG1~7 INNER SW
SEG 6
TPN3 PH3P
SYNCHRO
INTRO
RANDOM
MEMORY
REPEAT
TUNER MODE
STOP
PLAY/ PAUSE
(FOR SANYO)
PCB-3TT.SCH
December 8, 1995



ITEM	P/N	DESCRIPTION	QTY
1	961-399801-01	CASS LENS (L)	1
2	961-399802-01	CASS LENS (R)	1
3	911-399801-01	CASS DOOR (L)	1
4	911-399802-01	CASS DOOR (R)	1
5	970-399801-00	TUNING KNOB	1
6	977-399802-00	VOLUME KNOB	1
7	972-399809-00	CASS KNOB	11
8	960-399801-06	DIAL LENS	1
9	960-399802-01	FUNCTION LENS	1
/10	900-399801-01	FRONT CAB	1
11	979-399801-00	SWITCH KNOB	2
12	144-092011-18	PUSH SW	1
13	144-022027-09	PUSH SW	1
15	531-094395-03	INTERNAL TOOTH WASHER	1
16	109-122491-01	DC MOTOR 12V DUAL	1
17	777-112801-00	REC PIN	1
18	442-217208-0A	DECK	1
19	978-112801-00	DUST COVER	1
20	931-336801-01	TURN TABLE	1
21	979-336801-01	8" DISC ADAPTOR	1
22	937-112801-00	DISC	1
23	929-336802-01	BRACKET FOR ADJUST START STOP	1
24	929-336801-01	ROTATORY ARM BRACKET	1
25	959-336802-01	TONE ARM	1
26	939-336802-01	TONE ARM SHAFT	1
27	948-336801-01	TONE ARM CLIP	1
28	959-336801-01	ROTOTRY ARM	1
29	914-331801-01	SW BOX COVER	1
30	914-336802-01	MICRO SW BOX	1
31	738-336801-00	TONE ARM LOCKING PIN	1
32	145-022420-13	SLIDE SW	1
33	190-282804-00	TURN TABLE MOTOR PCB	1
34	775-936801-00	CAPSTAN	1
35	992-381802-00	EQUALIZER KNOB	4
36	777-381809-00	RC VOL SPRING	1
37	938-112809-00	VOLUME SW ADAPTOR	1
38	190-399809-00	EQ PCB	1
39	190-399808-00	LED PCB	1
/40	926-399801-00	DIAL BRACKET	1
41	728-112801-00	PCB SUPPORT BKT	2
42	940-338801-01	DIAL POINTER	1
43	730-383801-00	TURNING SHAFT	1
44	744-066301-00	DIAL SPRING	1
45	190-399801-00	MAIN PCB	1
46	951-068102-00	ANT HOLDER	1
47	938-112801-00	SW ADAPTOR	2
48	968-112801-00	FUNCTION KNOB	2
49	938-112801-00	KNOB HOLDER	2
50	524-065201-00	SPECIAL NUT	1
51	935-112816-00	SIDE CAP (L)	1
52	938-112815-00	SIDE CAP (R)	1
53	101-481128-72	PJX FORMER	1
54	631-112803-00	BACK FIBER BOARD	1
55	520-407030-70	NUT (N40) OD 70 T 3.0 MM	1
56	190-399806-01	EAR PHONE PCB	1
57	518-082825-01	PUSH WASHER	1
58	518-082825-01	PUSH WASHER	1
59	749-112801-00	FIXING PLATE ID 1.71 3	12
60	749-112802-00	FIXING PLATE ID 1.32	4
61	516-300710-10	SELF TAPPING SCREW 3×10P/T	13
62	516-300806-10	SELF TAPPING SCREW 3×6P/T	30
63	516-260206-10	SELF TAPPING SCREW 2.6×8P/A	3
64	516-260606-10	SELF TAPPING SCREW 2.6×6 P/T	1
65	500-264406-10	MECHINE SCREW 2.6×6 P/W	1
66	504-400710-00	MECHINE SCREW 4×10 B/W	20
67	502-264505-10	MECHINE SCREW WH B 2.6×45 BW	3
68	504-305006-10	MECHINE SCREW 3×6 B/W	3
69	517-260206-10	SELF TAPPING SCREW 2.6×6 P/T	2
70	517-306212-10	SELF TAPPING SCREW 3×12 P/T	2
71	516-200606-10	SELF TAPPING SCREW 2×6 P/T	2
72	777-336809-00	ROTATORY ARM SPRING	1
73	758-088802-00	RECORDER PIN HOLDER	1
74	942-332801-00	DIAL DRUM	1
75	738-336802-00	TURNING SHAFT	1
76	607-112805-00	SPK BOX	2
77	908-112803-01	SPEAKER TRIM (R)	1
78	908-112804-01	SPEAKER TRIM (L)	1
79	630-143016-00	FIBER WASHER	1

PARTS LIST

001010250014	RESISTOR 1K OHM 1/4W
001022150014	RESISTOR 220 OHM 1/4W
001033350014	RESISTOR 33K OHM 1/4W
001039350014	RESISTOR 39K OHMS 1/4W
001056250014	RESISTOR 5.6K OHM 1/4W
006010720010	CAP ELEC 100MF 10V
006047720016	CAP ELEC 470MF 16V
00610301250	CAP CERAMIC 300PF +-5% 50V
00700102450	CAP MYLAR 0.001UF +-20% 50V
00700222450	CAP MYLAR 0.0022UF +-20% 50V
00800102325	CAP POLY 1000PF +-10% 50V
011002638000	DIODE 1S2638 REPLACEMENT 117
01210332108	RESISTOR SEMI-FIXED B-10K OHM H TYPE
033022480065	IC PT2248
03380914814	IC TC9148P
03380915314	IC TC9153AP
054205	FUSE T1.6A/250V
101480288A5	TRANSFORMER POWER EI-48
10211001702	COIL AM IFT CEC-A17 YELLOW
10221001302	COIL FM IFT CEC F13 ORANGE
10221001502	COIL FM IFT CEC-F15 PINK
10221008101	COIL FM IFT FHC-81AO ORANGE
10281002902	COIL AM OSC OEC-A29 RED
10281023701	COIL AM OSC AM0 237RO RED
10281600002	COIL REC OSC
10313202012	COIL LW ANTENNA
10321201012	COIL AM ANTENNA 120:10T 4X120MM
10402514508	COIL WOUND T=2.5 ID=4.5 W=.8MM
10403514508	COIL WOUND T=3.5 ID=4.5 W=0.8MM
10414515006	COIL WOUND T=14.5 ID=5 W=0.6MM
10510210102	COIL FIXED INDUCTOR 1MH +-10%
10730045016	FILTER AM CERAMIC 450KHZ(BFU450C4N)
10730045023	FILTER CERAMIC CMU1-450A01
10730046506	FILTER AM CERAMIC 465KHZ SFU-465B
10731070026	FILTER FM CERAMIC
11310310512	RESISTOR CARBON FILM 10K OHM 1/4W +-5%
11310910512	CARBON FILM RESISTOR 1 OHM
11310910512	CARBON FILM RESISTOR 1 OHM
11312310512	RESISTOR CARBON FILM IM OHM 12K OHM
11322310517	RESISTOR CARBON FILM 22K OHM 1/4W
11324310512	RESISTOR CARBON FILM 24K 1/4W +-5%
11327410512	RESISTOR CARBON FILM 270KOHM 1/4W +-5%
11333210517	RESISTOR CARBON FILM 3.3KOHM 1/4W
11347010512	RESISTOR CARBON FILM 47OHM 1/4W +-5%
11347010512	RESISTOR CARBON FILM 47OHM 1/4W +-5%
11347210512	RESISTOR CARBON FILM 4.7KOHM 1/4W +-5%
11347210512	RESISTOR CARBON FILM 4.7KOHM 1/4W +-5%
11347310512	RESISTOR CARBON FILM 47K OHM 1/4W
11368010512	RESISTOR CARBON FILM 68ohm 1/4W +-5%
11368010512	RESISTOR CARBON FILM 68ohm 1/4W +-5%
11368110512	RESISTOR CARBON FILM 660ohm 1/4W +-5%
11382110512	RESISTOR CARBON FILM 820ohm 1/4w +-5%
11382210512	RESISTOR CARBON FILM 8.2KOHM 1/4W +-5%
12230010001	CAP TRIMMER 30PF
12310135010	CAP ELEC 100PF +-10% 50V
12310135010	CAP ELEC 100PF +-10% 50V
12315135010	CAP CERAMIC 150PF +-10% 50V
12318035010	CAP CERAMIC 18PF 50V

12320337030	CAP CERAMIC 0.02MFD +80-20% 50V
12330034013	CAP CERAMIC 30PF +-5% 50V
12339135010	CAP CERAMIC 390PF +-10% 50V
12340337030	CAP CERAMIC 0.04MF 50V
12340337030	CAP CERAMIC 0.04MF 50V
12347135010	CAP CERAMIC 470PF +-10% 50V
12347237030	CAP CERAMIC 0.0047UF +80%-20% 50V
12556107002	CAP POLY 560PF +-5% 50V
12610407101	CAP MYLAR 0.1MF 50V
12618307101	CAP MYLAR 0.018UF +-10%
12622307101	CAP MYLAR 0.022MF 50V
12633207101	CAP MYLAR 0.0033UF +-10% 50V
12710504801	CAP ELEC 1UF +80%-20% 16V
12710604701	CAP ELEC 10MF 16V
12710704801	CAP ELEC 100UF +80%-20% 16V
12722703801	CAP ELEC 220MF 10V
12722703801	CAP ELEC 220MF 10V
12722704801	CAP ELEC 220MF 16V
12722704801	CAP ELEC 220MF 16V
12733507801	CAP ELEC 3.3MF 50V
12747507801	CAP ELEC 4.7MF 50V "REPLACES 25V"
13013002300	DIODE CDG23
13021011620	DIODE SD116 AFC (NEC)
13021104300	DIODE FV1043 AFC
13031400100	DIODE 1N4001
13041005100	DIODE ZENER 5.1V
13041005600	DIODE ZENER 5.6V 0.5W
13041009500	DIODE ZENER 9.5V 0.5W
13051012400	DIODE LED TLR124 3MM RED
1306001L230	DIODE IRE EL-1L2
13060033300	DIODE IRE SIR333
13060048100	INFRARED EMITTER SIR-481ST3F (R OHM)
13123901403	TRANSISTOR 9014C
13125141707	TRANSISTOR 2SC1417G
1313DG55515	TRANSISTOR 3DG5551
1313DG9013H	TRANSISTOR 3DG9013H/2SC9013H
13300225061	IC KA2250 DUAL ELECT. VOLUME CONTROL
13300225371	IC PT2253
13300401313	CMOS IC 4013 D TYPE FLIP FLOPNIC
13300401318	CMOS IC 4013
13320181016	IC LA1810
13320330818	IC BA3308
13380224971	IC PT2249 REMOTE DECODER (RX)PTC
13380980161	IC KS9801 INFRARED RAY REMOTE RECEIVER
13380980261	IC KS9802 (INFRARED REMOTE TRANSMITTER)
13650063800	REMOTE RECIEVER DETECTING SENSOR
14104311011	SWITCH SLIDE (SK43D03M11) 4P3T
142331	RESISTOR 330R 1% R141
14409201105	SWITCH PUSH RECORD/PLAY
14711010000	SWITCH MICRO SOH-211 HS (11546)
153000902000	MECHANISM CD (CDK90TV2 SANYO S)
16112350120	SOCKET HEADPHONE D=3.5MM
16200980004FA	REMOTE HANDSET
16624504000	SPEAKER 4" 4OHM 5W
18322010002	FERRITE BAR Q2M 10X100MM
21043418	CFR 1K8 J 1/4W
3081090856	CAP ELEC 1UF 50V
321090153	TRANSISTOR 9015C
413053	CAP ELEC 2200MF 16V
4412603887A	MECHANISM CASSETTE (CS-212SC-3887A)

75006310100	LUG SOLDERING
7540130	IC TC4013BP
75808880200	RECORD PIN HOLDER
76206620100	CLIP SPEAKER
76668680100	HOLDER FUSE
900C22A0102	CABINET FRONT
902C22A1100	CABINET REAR
911C22A0102	DOOR CASSETTE - ALBA DESIGN
919C82C0102	COVER DUST
958C22A0100	KNOB FUNCTION (A) CCT
958C22A2100	KNOB FUNCTION (B) CCT
960C22A0105	LENS DISPLAY - ALBA DESIGN
960C22A0201	LENS CASSETTE DOOR
965C82C0101	LENS DUST COVER
968C22A0100	KNOB VOLUME (UP-DOWN)
970C22A0100	KNOB TUNING
97213930100	KNOB CASSETTE "A"
979C22A0100	KNOB FUNCTION
98803380100	GEAR (CASS DOOR DAMPER)
98933680100	GEAR HOLDER
991C22A0100	KNOB POWER
BOM-TLC170	BILL OF MATERIAL
CC050102MV	CAP CERAMIC 0.001UF +80-20% 50V
CEXE1H228A	CAP ELEC 0.22MF 50V
D1N4148	DIODE 1N4148
IB-TLC170	INSTRUCTION BOOK (TLC170/TLC160)
IC02206	IC KA3208 EQUIVALENT KA2206 (14 PIN)
N572SD882Q	TRANSISTOR 2SD882Q
Q8050D	TRANSISTOR 8050D,PE8050,2SD467 ALL
SM-TLC170	SERVICE MANUAL (TLC170/TLC160) **
SPK-TLC170	SPEAKER BOX ASSY